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RESEARCH LETTER

The effect of a self-management intervention on health care utilization in a sample of chronically ill older patients in the Netherlands

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To the editor

In the Netherlands, the combination of an aging population and increasing cut-backs in health care will result in a growing burden on the health care system [1]. Studies on self-management programmes, however, have demonstrated a significant reduction in health care utilization among participants in such programmes [2–14]. The Chronic Disease Self-Management Program (CDSMP) of Lorig *et al*. is such a self-management programme [4,7,8]. Although studies showed that participating in this programme can reduce health care utilization, this programme has not yet been evaluated in the Netherlands. Therefore, we evaluated the effect of the CDSMP on health care utilization among chronically ill older people in the Netherlands. Based on the results of previous studies, we expected to find a decrease in health care utilization in our sample of patients aged 59 years or older with angina pectoris or heart failure, chronic obstructive pulmonary disease or asthma, arthritis or diabetes.

From May 2003 until May 2004, 129 participants were recruited through outpatient clinics at the University Medical Center Groningen and through announcements in the media and in the magazines of various patient associations. The participants were randomly assigned to either the intervention group (CDSMP; $n = 67$) or the control group (care-as-usual; $n = 62$). Data were collected at baseline, that is, 3 weeks before the course started, and 6 months after the end of the course, through self-administered questionnaires that were mailed to the patients. The data included gender, age, marital status and primary condition. Health care utilization was measured by asking how often people made use of certain health care services [15,16].

At baseline, no differences were found between the intervention group and the control group with regard to any of the characteristics and outcomes (Table 1).

ANCOVA showed a weak but significant difference between the intervention group and the control group with regard to use of home care (Table 2). However, this significant difference was due to the combination of a decrease in utilization in the intervention group and an increase in utilization in the control group. At baseline, two participants in the intervention group needed home care temporary after, respectively, rehabilitation and a broken shoulder. In the control group, three patients had hip surgery, and therefore needed home care at six months after the end of the course. The difference with regard to home care utilization was therefore due to acute medical incidents rather than having a chronic disease. No differences were found with regard to visits to a general practitioner (GP), visits to a medical specialist, total visits to a doctor, visits to a physical therapist, or number of days hospitalized.

In order to check whether outliers might have influenced the results of the ANCOVA's, we decided to categorize the data on health care utilization. We used the categories of Westert *et al*., which are ordinal, that is, the first category relates to the lowest level of health care utilization, and the last category to the highest level, as follows: (1) no services used; (2) primary care (GP and home care and/or physical therapist; minimum of two types); (3)

Table 1 Patient characteristics

	Intervention ($n = 67$)			Control ($n = 62$)		
Variable	*n* (%)	Mean (SD)	Range	*n* (%)	Mean (SD)	Range
Age (years)		68.2 (6.1)	59–84		68.5 (6.7)	59–87
Gender						
Male	25 (37.3)			20 (32.3)		
Partner		44 (65.7)			36 (58.1)	
Type of disease						
Diabetes	22 (32.8)			18 (29.0)		
Lung disease	22 (32.8)			14 (22.6)		
Arthritis	20 (29.9)			26 (41.9)		
Heart disease	3 (4.5)			4 (6.5)		

Table 2 Mean number of visits (SD, range) of the intervention and control group at baseline and 6 months

	Baseline				Six months			
	Treatment ($n = 67$)		Control ($n = 62$)		Treatment ($n = 67$)		Control ($n = 62$)	
Variable	Mean (SD)	Range	Mean (SD)	Range	Mean (SD)	Range	Mean (SD)	Range
General practitioner	3.0 (2.9)	0–15	4.2 (4.9)	0–24	3.1 (2.3)	0–12	4.1 (5.1)	0–26
Medical specialist	2.8 (2.2)	0–10	2.2 (2.7)	0–19	2.7 (2.8)	0–15	2.2 (1.7)	0–7
Doctor visits	5.8 (3.9)	0–17	6.4 (5.7)	0–26	5.8 (4.3)	0–24	6.3 (5.9)	0–29
Physical therapist	6.3 (13.0)	0–52	7.4 (14.5)	0–52	5.6 (11.6)	0–52	5.3 (11.8)	0–52
Home care	11.3 (29.3)	0–182	11.6 (30.0)	0–182	8.7 (24.7)	0–160	15.5 (41.9)	0–194
Admission hospital	0.2 (0.6)	0–2	0.1 (0.3)	0–1	0.2 (0.3)	0–1	0.3 (0.6)	0–3
Duration of admission (days)	1.3 (4.6)	0–33	0.4 (1.4)	0–7	1.1 (4.4)	0–25	1.2 (2.8)	0–13

medical care (GP or medical specialist); (4) clinical care (GP and/or medical specialist and/or hospitalization; minimum of two types); and (5) comprehensive care (GP and/or home care and/or physical therapist and/or medical specialist and/or hospitalisation; minimum of three types) [9]. Again, no significant differences between the intervention group and the control group were found.

One possible explanation for finding almost no effects, in contrast to the findings in the USA, is that the USA has a different health care system and a different health insurance policy. For example, in the Netherlands, the GP acts as gatekeeper to the health care system, and patients must be referred by a GP to all other health care services. Patients are therefore not free to choose their own health care.

A second explanation might be our sample, which seems to be quite healthy and low in health care utilization. When comparing the health care utilization of our sample with a sample of chronically ill patients aged 45 years and older in the Netherlands [17], our participants indeed visited a physical therapist less often, and were less often admitted to a hospital. However, regarding utilization of the other health care services, no differences were found. The intervention, though, might be more effective in a sample that is less healthy and makes more use of health care.

Our study has some limitations. First, the follow-up period in our study was 6 months. However, a great majority of the studies investigating the effect of self-management programmes on health care utilization had follow-up periods of 1 to 3 years. The period of 6 months might have been too short to bring about a reduction in the health care utilization, but unfortunately, measuring the effects of the CDSMP after 12 months was beyond the scope of this study. Therefore, future research should include a follow-up period of at least 1 year.

Second, our results might be influenced by the way in which some aspects of health care utilization were measured. Certain health care services might have overlapped each other, for instance receiving physical therapy during admission in a nursing home. It might therefore be questioned whether our measurement methods were sensitive enough to measure these separate aspects of health care utilization.

Third, we collected data through self-report, over a period of 6 months, and this can be quite a long period in which to recall all health care utilization, especially in an older population. This problem might be overcome, for example, by using a monthly questionnaire, asking participants to keep a diary of their health care utilization, or by checking the medical records.

To summarize, in this study we found no convincing evidence for a decrease in health care utilization as a result of the CDSMP. More research is needed to investigate more thoroughly the long-term effectiveness of the CDSMP in decreasing health care utilization in the Netherlands.

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